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HTF II

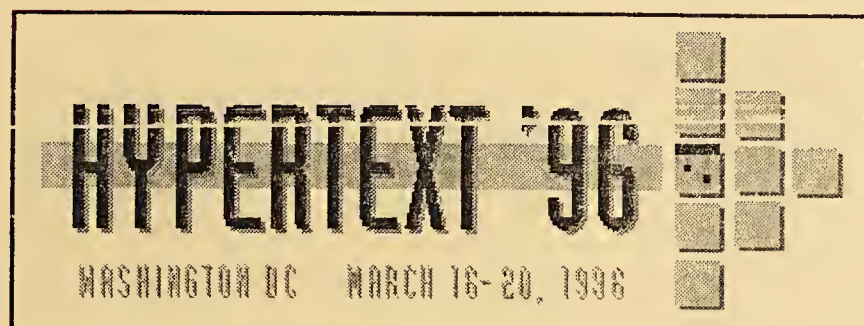
The Second International Workshop on Incorporating Hypertext Functionality Into Software Systems

Washington, U.S.A.

16th and 17th March, 1996.

In connection with the
ACM Hypertext '96 conference

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Second International Workshop on Incorporating Hypertext Functionality into Software Systems - HTF II

CALL FOR PAPERS

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Abstract

This workshop takes a cross-disciplinary approach to implementing hypermedia as value-added support functionality. We consider the entire process of embedding hypertext functions into non-hypertext oriented information systems. These include a large base of scientific and business applications, which dynamically generate their content, and which people use primarily for their underlying analytic functionality. Hypertext features both supplement and give users access to the application's primary activities.

INTRODUCTION

This paper presents details of the second workshop on incorporating hypertext functionality (HTF) into software systems to be held in conjunction with the ACM Hypertext '96 conference in Washington D.C.

The first workshop of this series was held in conjunction with the ACM European Conference on Hypermedia Technologies (ECHT '94). This workshop was very successful, and was reported in the SIGLINK newsletter. A final report was compiled from the minutes of the workshop. This report and the position papers were issued as Technical Report #95-10 by the Institute for Integrated Systems Research at the New Jersey Institute of Technology.

At the conclusion of the first workshop, it was agreed that many new issues had been raised and that future developments might change the solutions proposed to the issues discussed. Hence a follow-up workshop is being held in conjunction with the ACM Hypertext '96 conference to address these new issues, and discuss recent developments pertinent to the topics of the previous workshop.

THEME OF THE WORKSHOP

The primary theme of this workshop is to investigate methods of providing hypertext functionality to users of information systems. This includes providing hypertext functionality to systems that lack it, as well as providing enhanced hypertext functionality to systems which have only limited hypertext capabilities.

- Establishing the relationship between hyperobjects and corresponding elements, using reference mechanism and code.

Then, the elements modelled in this way using the hypermedia metaphor could benefit not only from the own services of the associated hyperobject and services provided by the hypermedia paradigm (navigation, history,...), but also from services of composite hyperobjects built in a pure hypermedia way (maps, tabletops,...) using associated hyperobjects as components, thus increasing the initial capabilities of the application.

From our point of view, implementing an application integrating HF will be easier and easier if using a tool that allows us to define/specialize hyperobjects services and maintain element-hyperobject relationship. However it is still difficult to get good applications with HF today, as all the more it requires specialists in Software Engineering and HCI. But the objective of providing HF to every kind of applications is very ambitious. We certainly are aware conscious of the difficulties linked to such a wide objective but we are optimistic as to the outcome.

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Issues In Applicative Hyperization of Unwitting Systems

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The hyperization of legacy systems and external systems, and the retro-hyperization of ancient document bases and databases, has several problems.

1. The connections may be either APPLICATIVE, that is, outside on some other layer, or EMBEDDED (somehow implanted or concealed in the data, in the form of pointers, anchors, labels, etc.)

I strongly favor applicative methods, as they leave original materials untouched.

2. A key technical issue is addressing structure. The material must hold still after connections are made.

What forms of stable addressing are possible in ongoing and legacy software?
(Stored and unchanging materials are relatively easy.)

In the xanalogical model¹ (Nelson, 1993 and 1995), there are two forms of connections: LINKS, or connections between things which are different, and TRANSCLUSIONS, or connections among things which are THE SAME.

I continue to argue that the transclusion is the vital complement to the link. It is the way that things can be in more than one place, and compared in those different locations.

Xanalogical structure is hyperstructure allowing both links and transclusions.

THE XANALOGICAL MODEL

Links are APPLICATIVE and adhere to the ELEMENTS (typically text bytes)

¹ The term "xanalogical" has been used by the author, and other members of the Xanadu team, for this structure since approximately 1985. One malicious and dishonest account of Xanadu history has treated our design as "bragging" and a misunderstanding of how computers work, rather than what it is, a principled design which can be achieved in many ways.

Thus links are to CONTENT and not to ANCHORS or to SLITS (addresses between characters)

All links have the same mechanism, whether by the document owner or not; all users get to make "first class" links

This is FAIR

This permits tracking connections over CHANGE

TRANSLUSION

TRANSLUSION is the complement to links and is understood EITHER as:

ONE THING INSTANCED IN MANY PLACES, CROSS-VISIBLE

(the conceptual level)

or

MANY COPIES MAINTAINING CONNECTION AND VIRTUAL IDENTITY

(working back from the implementation)

Transclusion permits portions to be freely re-used

Transclusion permits links to continue to adhere

Transclusion permits study of the same material in a variety of contexts under a variety of auspices

Transclusion permits a pro-rata sale of material, potential cleaning up a considerable subsector of the copyright problem.

CHANGE

Changes tracked by different methods* (*proprietary)

Delta list, rearrange to negative is simplest

Because of adherence to bytes, links persist through evolution

REQUIRED FOR XANALOGICAL MODEL:

Stable addressing of data elements over time and among versions

Efficient means of searching through all links and transclusions which include a given span (combinatorially very vexing).

Proprietary methods of XOC Inc., licensed

Massively parallel approach probably will handle it.



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